steer davies gleave

Memo

To	Puerto Rico P3 Authority		
Cc			
From	Steer Davies Gleave		
Date	25 August 2017		
Project	Public-Private Partnership for maritime Services in Puerto Rico	Project No.	22826202

Introduction

1. Steer Davies Gleave (SDG), as part of their contract as technical advisors for the P3 for Maritime Transportation Services in Puerto Rico, has been asked to develop several ridership and revenue analyses related to ferry services between the municipality of Fajardo and the municipal islands of Culebra and Vieques (the Puerto Rico Island Ferry System) currently operated by Autoridad de Transporte Marítimo (ATM).

2. The P3 Authority is interested in assessing the degree to which current subsidy levels on the Island Ferry System can be reduced. Farebox recovery at current fares ($2.25 for Culebra and $2.25 for Vieques) is under 10%. Using models previously developed by SDG and KPFF Consulting Engineers (KPFF) we have examined the following scenarios:

3. **Revenue optimizing scenario**: Previous research suggests that the revenue-maximizing fare is $10, which appears to be a reasonable level given the incomes of users on the one hand but also that only air travel is an alternative. Using SDG's ridership models developed for the Island Ferry System, the effect of raising the fares for both service to $10 reduces annual passengers from **1,170,153** (the actual ridership in 2015) to **558,580.** However, the higher fare still increases revenues substantially, from **$2,477,834** to **$5,585,797.** At a fare of $10 fares cannot be increased further without driving away proportionately more passengers than the increase in revenues.

4. **Reduced service scenarios:** Reducing service levels has two effects. First, it reduces operating costs as fewer sailings occur. Second, it reduces passenger levels as capacity decreases and wait times increase. SDG and KPFF have modeled the ridership, revenue and operating cost impacts of reducing service levels (sailings) by 15%, 30%, 45%, 60% and 75%.

5. As expected reducing sailings by these amounts reduces operating costs (proportionately) but also reduces ridership and revenues. Revenues decrease from a high of $5.6 million to $3.9 million. Note that the estimated ridership is reduced by more than 60%, reflecting a highly-degraded level of service, with only a quarter of the initial sailings, as well as a greatly increased fare.

6. Annual operating costs are decreased from $20.9 M to $5.2 M. Despite the drastic cuts in service, and a $10 fare, there's still a need for subsidy; these levels will be declining from $15.3M/year to $1.3 M/year.

Table 1: Estimated Annual Ridership at $10 Fare and Varying levels of Service

		Annual Ridership			Annual Revenue		
Annual Sailings	%Decrease	Resident	Nonresident	Total	Resident	Nonresident	Total
7,593		158,676	399,903	558,580	$ 1,586,764	$ 3,999,033	**$ 5,585,797**
6,454	-15%	152,684	381,006	533,690	$ 1,526,841	$ 3,810,057	**$ 5,336,898**
5,315	-30%	146,061	360,232	506,293	$ 1,460,610	$ 3,602,320	**$ 5,062,930**
4,176	-45%	138,569	336,898	475,467	$ 1,385,690	$ 3,368,982	**$ 4,754,672**
3,037	-60%	129,775	309,776	439,552	$ 1,297,755	$ 3,097,764	**$ 4,395,518**
1,898	-75%	118,725	276,204	394,928	$ 1,187,250	$ 3,949,285	**$ 3,949,285**

Table 2: Estimated Annual Operating Costs Under Varying levels of Service

Annual Sailings	%Decrease	Annual Capacity (seats available)	Total Annual Operating Costs
7,593		2,599,109	$20.9 M
6,454	-15%	2,210,529	$17.8 M
5,315	-30%	1,820,638	$14.7 M
4,176	-45%	1,430,534	$11.5 M
3,037	-60%	1,040,780	$8.4 M
1,898	-75%	650,683	$5.2 M